

Amendment to the Claims:

1. (Currently Amended) An x-ray detector which includes:

5 (a) at least one conversion unit [[(1)]] for the absorption of x-ray quanta while generating an electric charge signal which corresponds to the absorbed energy,

(b) at least one evaluation unit [[(10)]] which has a pair of parallel channels for concurrently processing said charge signals, [in] the parallel channels including:

10 a counting counter channel [[(5)]] whose counter output [[(8)]] presents a measure of the which counts a number of charge signals detected since a beginning of a measurement interval, as well as, in parallel therewith, in and,

15 an integrator channel [[(7)]] whose integrator output [[(9)]] presents a measure of the which measures overall charge of the charge signals detected since [[a]] the beginning of the measurement interval;

20 (c) at least one data processing unit [[(11)]] which processes the signals from the counter output [[(8)]] and from the integrator output [[(9)]] in combination so as to determines an the absorbed quantity of x-rays from a combination of both the count of the number of charge signals from the counter channel and the overall charge measurement from the integrator channel.

25 2. (Currently Amended) The An x-ray detector as claimed in claim 1, characterized in that wherein the data processing unit [[(11)]] is arranged in such a manner that it attaches more weight to the signals from the counter output channel [[(8)]] than to the signals from the integrator output channel [[(9)]] in the case of for a low absorption rate of the x-ray quanta.

3. (Currently Amended) An x-ray detector as claimed in claim 1, characterized in that comprising:

5 (a) at least one conversion unit for the absorption of x-ray quanta while generating an electric charge signal which corresponds to the absorbed energy;

10 (b) at least one evaluation unit for processing said charge signal in a counting channel whose counter output presents a measure of a number of the charge signals detected since a beginning of measurement as well as, in parallel therewith, in an integrator channel whose integrator output presents a measure of an overall charge of the charge signals detected since a beginning of measurement;

15 (c) at least one data processing unit which processes the signals from the counter output and from the integrator output in combination so as to determine the absorbed quantity of x-rays, the data processing unit [[(11)]] is being arranged in such a manner that:

20 it attaches more weight to the signals from the integrator output [[(9)]] than to the signals from the counter output [[(8)]] in the case of a high absorption rate of the x-ray quanta, and

25 it attaches more weight to the signals from the counter output than to the signals from the integrator output in the case of a low absorption rate of the x-ray quanta.

4. (Currently Amended) The An x-ray detector as claimed in claim 1, characterized in that wherein the data processing unit [[(11)]] is arranged in such a manner that it determines the a mean energy of the detected x-ray quanta from the signals from the counter output channel [[(8)]] and the signals from the integrator output channel [[(9)]].

5. (Currently Amended) The An x-ray detector as claimed in claim 1, characterized in that wherein the evaluation unit [[(10)]] includes an input amplifier [[(2)]] which preprocesses amplifies the charge signal presented by the conversion unit [[(1),]] notably amplifies it, and conducts the

amplified signal thus preprocessed to the counting channel [[(5)]] and to the integrator channel [[(7)]].

6. (Currently Amended) The An x-ray detector as claimed in claim 1, characterized in that it includes further including:

5 a plurality of conversion units [[(1)]] which are arranged so as to be distributed in one plane[,], that is, preferably in the form of a matrix.

7. (Currently Amended) The An x-ray detector as claimed in claim 6, characterized in that wherein each conversion unit [[(1)]] is associated with an evaluation unit [[(10)]] and a data processing unit [[(11)]], all evaluation 5 units and data processing units being formed as microelectronic units on a common substrate.

8. (Original) A method of evaluating the absorption signals of an x-ray detector which is preferably arranged so as to face an x-ray source in a computed tomography apparatus, which method includes the following steps:

5 (a) counting the x-ray quanta absorbed by the x-ray detector in a time interval;

(b) integrating the absorption energies of the x-ray quanta absorbed in said time interval;

10 (c) determining the mean absorption energy of the x-ray quanta absorbed in said time interval from the measurements in steps (a) and (b);

(d) comparing the mean absorption energy from step (c) with the original emission spectrum of the x-ray source.

9. (Previously Cancelled)

10. (Currently Amended) An x-ray examination apparatus which includes an x-ray source for the emission of x-rays with an original x-ray spectrum and an x-ray detector, 5 with the x-ray detector including:

(a) at least one conversion unit [[(1)]] for the absorption of x-ray quanta while generating an electric charge signal which corresponds to the absorbed energy;

10 (b) at least one evaluation unit [[(10)]] for processing said charge signal in parallel in:

15 a counting channel [[(5)]] whose counter output [[(8)]] represents presents a measure of the number of charge signals detected since in a beginning of measurement time interval, as well as, in parallel therewith, in

20 an integrator channel [[(7)]] whose integrator output [[(9)]] represents presents a measure an integration of the absorbed energy of the x-ray quanta detected in the overall charge of the charge signals detected since a beginning of measurement time interval,

25 (c) at least one data processing unit [[(11)]] which:

30 processes the signals from the counter output [[(8)]] and from the integrator output [[(9)]] in combination so as to determine the absorbed quantity of x-rays mean absorbed energy of the x-ray quanta absorbed in the measurement time interval, and

30 comparing the mean absorbed energy in the measurement time interval with the original spectrum of the x-ray source.